

Know Your Watershed:

Holmes Run • Tripps Run • Cameron Run

Water Quality

Actions, Consequences, and Goals

Sources of Pollution

Point Source Pollution

Point sources of pollution are those that can be tracked to a specific point or outfall. It's easier to regulate point source pollution because it is confined and often there is someone responsible for clean-up.

Point source pollution usually originates in industries, or municipalities. Point source pollution is controlled by waste water treatment plants.

Nonpoint Source Pollution

Nonpoint source pollution (NPS) is pollution which originates from diverse sources. Nonpoint source pollution may originate as atmospheric deposition, leaking automobiles, manure from birds and animals, pet waste, soil erosion and dustfall, misapplied lawn fertilizers and pesticides, failed septic systems from home, as well as a host of other sources.

Animals

Birds and mammals contribute to bacterial pollution in runoff.



Trash

Trash dumping leads to increased nutrient content, toxic chemicals, and litter.



Fertilizers & pesticides

Fertilizers and pesticide used for lawns, agriculture, and gardening may lead to increase in nutrient content and toxic chemicals.



Transportation

Leakage of vehicular fluids, deterioration of vehicle parts including brakes, clutch and tires, automobile emissions and leakage of antifreeze lead to increases in nutrients, heavy metals and toxic chemicals.



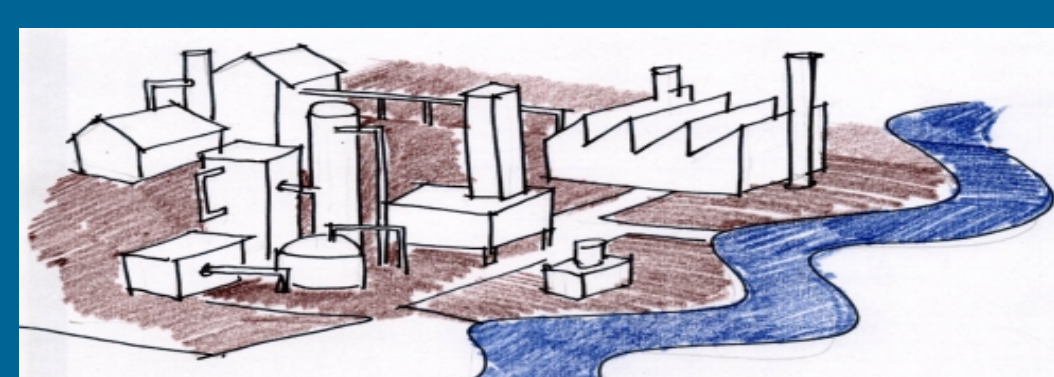
Construction

Construction sites lead to increased sediments and Total Suspended Solids.



Industry

Industrial sites can cause nutrient and chemical pollution.



Rural Areas

Failed septic systems cause bacterial problems.



Industry

Dustfall on impervious surfaces contributes to NPS pollution.



Goals: Where We Want To Go!

These are desirable water quality targets for streams, lakes and coastal waters.

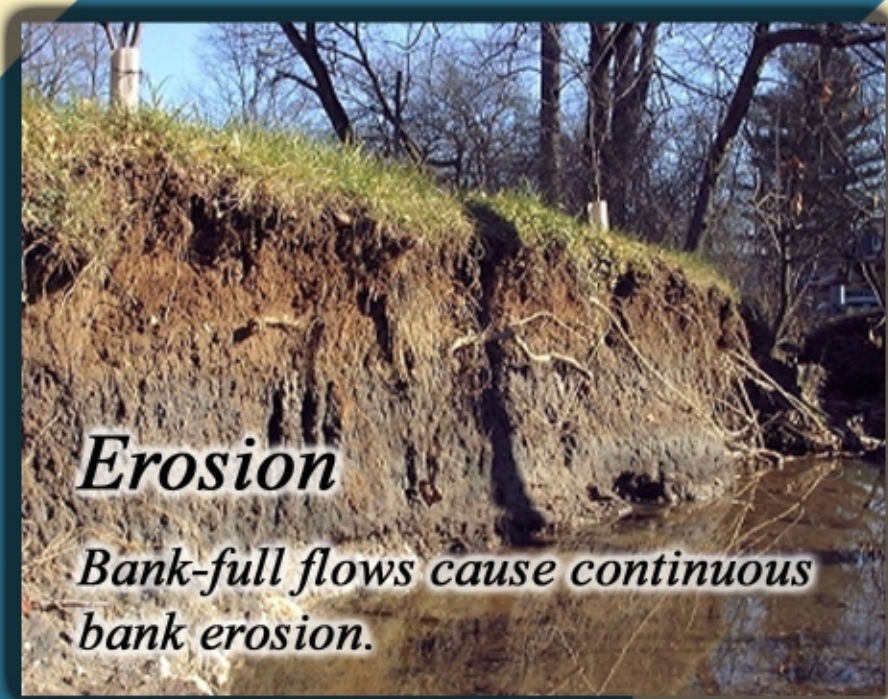
Water Quality Indicator	Healthy Condition	Comments
Dissolved Oxygen	5 - 6mg/l *	Fish needs Dissolved Oxygen to live.
Sediment	Minimal	Minimize turbidity & deposits
Phosphorus	.05mg/l	Controls excessive aquatic vegetation: algae and water plants
Nitrogen	as low as possible	
Temperature	60-70°F	High quality fish (trout) need cold water
Fecal Coliform	<200 colonies/100 ml	Typical state standard
pH (acidity)	6.5 to 8.5	Well buffered natural water

* one milligram per liter (mg/l) is equivalent to one part per million parts.

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Lake Management

PROBLEM

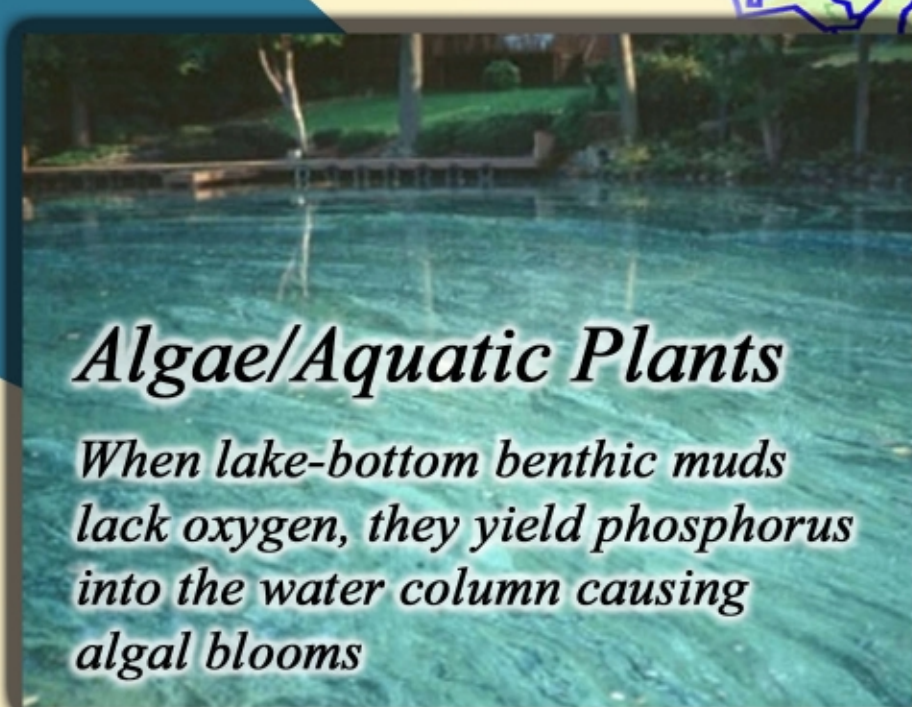


Erosion

Bank-full flows cause continuous bank erosion.



Absence of Watershed Management
Creates a Wide Range of Problems



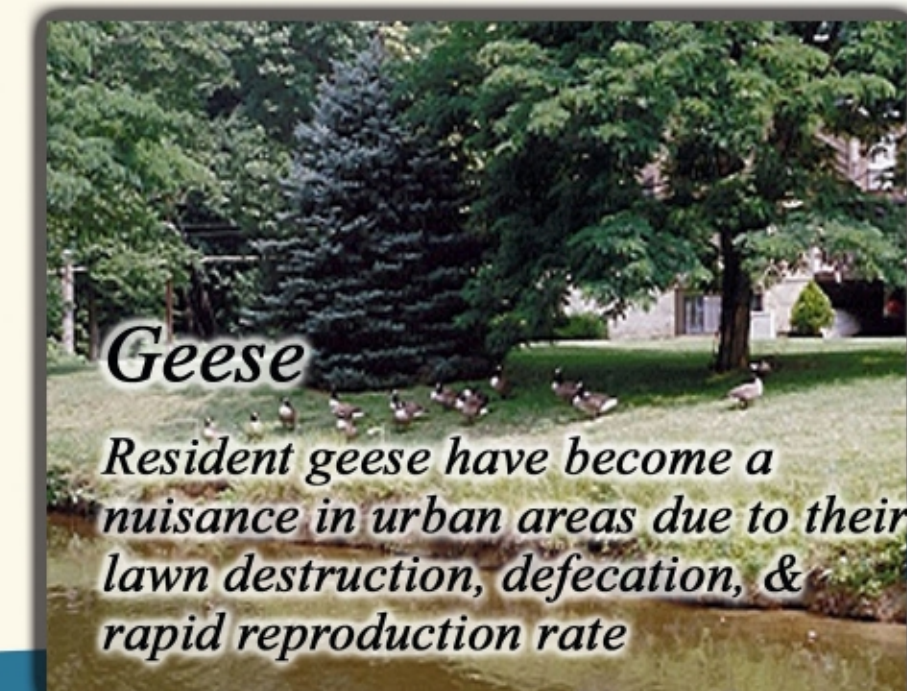
Algae/Aquatic Plants

When lake-bottom benthic muds lack oxygen, they yield phosphorus into the water column causing algal blooms



Livestock

Livestock deposit waste materials that pollute streams & ponds



Geese

Resident geese have become a nuisance in urban areas due to their lawn destruction, defecation, & rapid reproduction rate

SOLUTIONS



Lake Mixing

Recycling leads to remission.



Lake Aeration & Mixing

Hypolimnetic Aeration



Mechanical Dredging

Sediment Removal



Water Quality Monitoring



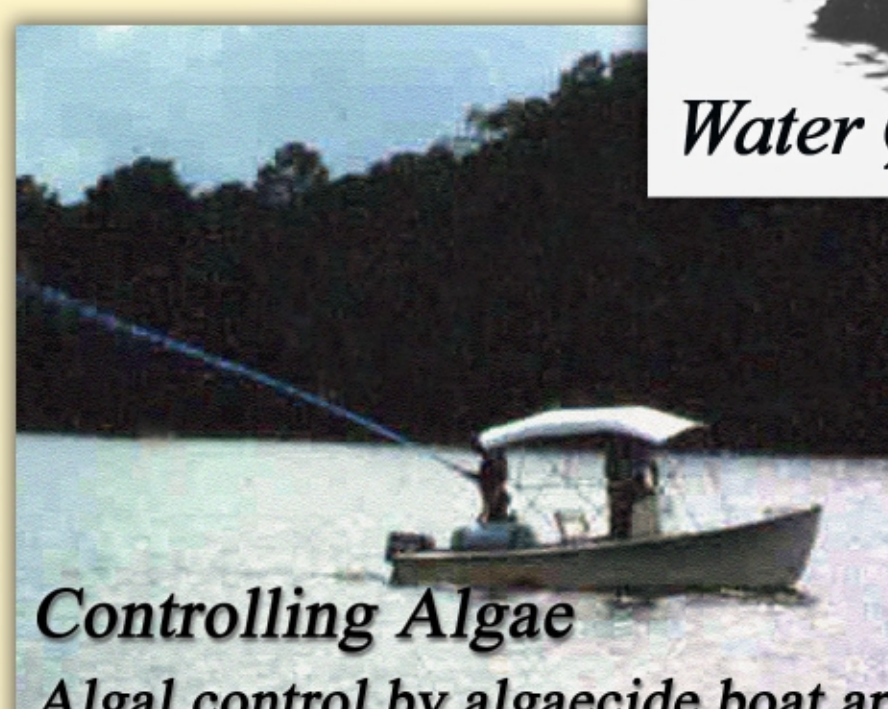
Weed Harvesting

Removes unwanted aquatic vegetation.



Common Carp

help remove unwanted fish biomass.



Controlling Algae

Algal control by algaecide boat application



Egg Oiling

One form of population control for geese.



Sediment Trapping

Catch sediment at entrance to lake.